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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,406	05/19/2000	Daniel H. Greene	D/A0041	7909

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EXAMINER

LAROSE, COLIN M

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/574,406

Applicant(s)

GREENE ET AL.

Examiner

Colin M. LaRose

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7,9-12,18 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-6,8,13-17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 February 2005 has been entered.

Response to Applicants' Amendment and Arguments

2. Applicant's amendments to independent claims 1, 10, and 11 and corresponding arguments are sufficient to overcome the previous combination of Lopresti and Nagaishi. However, those arguments are now moot in view of the new grounds of rejection established below.

Claim Rejections - 35 USC § 112

3. In view of Applicant's remarks, the previous rejections under 35 USC § 112 have been withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 10 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,748,807 to Lopresti et al. (hereinafter "Lopresti") and U.S. Patent 6,023,536 by Visser.

Regarding claim 1, Lopresti discloses a method for decoding image data for a hardcopy document, comprising:

recording a scanned representation of the hardcopy document (column 7, lines 6-7) that includes a primary set of symbol data and a secondary set of encoding data (column 6, lines 41-58); the primary set of symbol data providing a first channel of human readable information rendered on the hardcopy document (column 6, lines 41-46); the secondary set of encoding data providing a second channel of machine readable information rendered on the hardcopy document (column 6, lines 51-58);

receiving a decoded form of the scanned representation of the hardcopy document from a decoding module to define a candidate set of symbol data (column 7, lines 11-13); and

rewriting, independent of the decoding module, the candidate set of symbol data using the secondary set of encoding data (column 7, lines 27-31; column 9, lines 29-33).

Lopresti does not disclose an event library identifying likely failures encountered when the scanned representation of the hardcopy document is decoded, wherein the event library comprises a rule that represents a transformation.

Visser discloses a system for correcting errors in optically scanned characters. In particular, Visser discloses the generation of likely "error patterns" in memory (see figures 3 and 4). When determining whether an error in a character string has occurred, the inputted character

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string is compared to the error patterns stored in memory. When a character string matches a pre-determined "fault pattern," the character string is deemed to have been misspelled and is transformed into a "correct pattern." Figure 5 shows details of the stored errors patterns.

The stored error patterns define certain events, called "fault patterns" (such as transposed, missing, or duplicated letters). Upon detection of an event, the inputted pattern is transformed into a "correct pattern," subject to a rule that determines the type of transformation. For example, in error pattern [4], two letters of the same value are transformed into a single letter of that value. Also, rules regarding "conditions" and "weights" imposed on the transformation are defined in the error pattern memory. See e.g. column 7, lines 5-60.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lopresti by Visser to utilize an event library (which identifies likely failures and comprises a rule that represents a transformation) to aid in rewriting the candidate set of symbol data, as claimed, since Visser discloses that employing an event library (i.e. likely "error pattern" transformations as shown in figure 5) facilitates the character recognition and correction process. See e.g. column 7, lines 5-12.

Claim 10 is drawn to an apparatus corresponding to the method of claim 1. A discussion similar to that presented above for claim 1 is applicable to claim 10. Claim 11 is similar to claim 10, except that it recites a scanner, instead of a means for recording. Lopresti discloses a scanner (Fig. 1, element 16).

With regard to claim 12, Lopresti discloses the apparatus according to claim 11, further comprising a module for decoding the secondary set of encoding data for use by the rewrite module (column 8, lines 33-35).

6. Claims 7, 9, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lopresti, Visser and U.S. Patent 5,594,809 to Kopec et al. (hereinafter "Kopec").

Regarding claims 7 and 18, Lopresti does not disclose that the decoding module performs dynamic programming to decode the scanned representation of the hardcopy document.

However, Kopec discloses a decoder based on dynamic programming for decoding (column 44, lines 49-52). Kopec's dynamic programming possesses inherent advantages with regard to decoding. Given this, and Lopresti's suggestion of using dynamic programming (column 10, lines 26-27), it would therefore have been obvious to one of ordinary skill in the art to utilize a decoding module which performs dynamic programming in Lopresti's system.

Regarding claims 9 and 20, Lopresti does not disclose that the decoded form of the scanned representation includes certainty estimates of the candidate set of symbol data.

However, this is well known in the art. Kopec teaches likelihood measurements for the decoded image (column 45, lines 27). This is, in essence, certainty estimates. In modifying Lopresti's system according to Kopec (note previous discussion), it would have been further obvious to one of ordinary skill in the art to employ certainty estimates because it would provide improved decoding.

Allowable Subject Matter

7. Claims 2-6, 8, 13-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CML
Group Art Unit 2623
11 June 2005


VIKKRAM BALI
PRIMARY EXAMINER